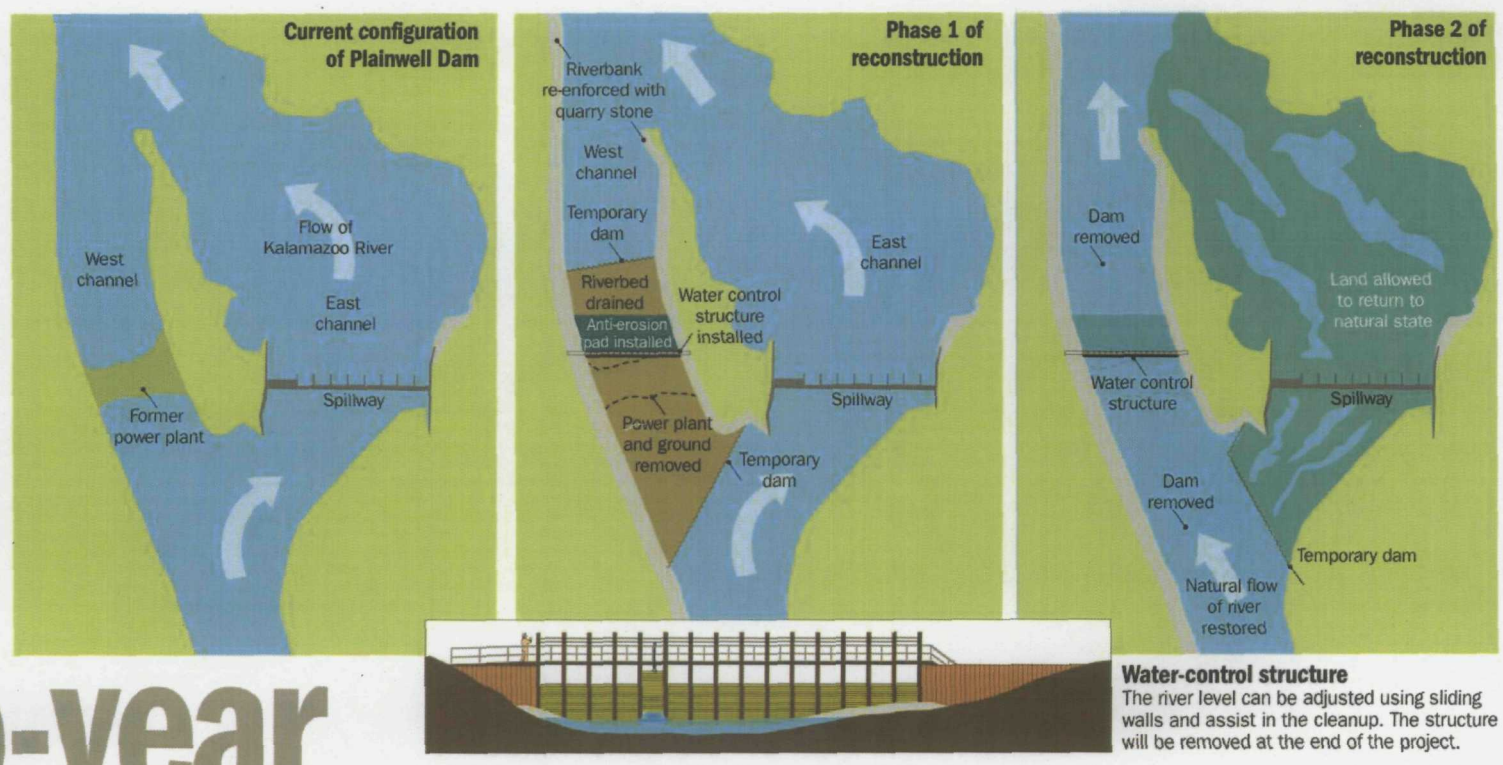
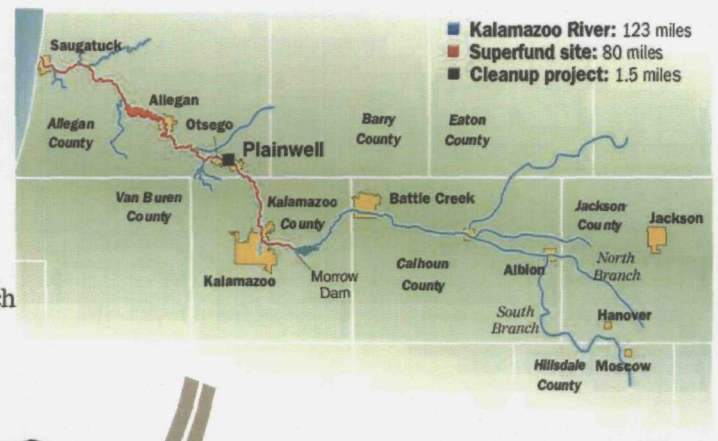
Replacing the dam

This summer, workers will first install temporary barriers to isolate the west channel, which used to power the Plainwell Dam's electricity generators. Debris from the old power house — decommissioned in the mid-1960s — will be removed and the river will be dredged to its original depth and restored to its natural banks. A new dam will be built in the west channel to regulate water flow during cleanup work upstream (south) next year. It will then be removed. The spillway next to the old dam will remain in place after the project is completed.



Water-control structure
The river level can be adjusted using sliding walls and assist in the cleanup. The structure will be removed at the end of the project.

Two-year cleanup project



The next stage of the cleanup of the Kalamazoo River starts this week in Plainwell. About 132,000 cubic yards of dirt, containing 4,400 pounds of polychlorinated biphenyls (PCBs), will be taken from the 1.5-mile stretch of the river. This constitutes the most significant phase of the 80-mile project since it was declared a federal Superfund site 17 years ago. Earlier cleanup work began near Kalamazoo and has proceeded downriver.

Work in 2007

This year's work includes demolition of the Plainwell Dam, installation of the protective silt screens and removal of contaminated sediment and bank soils from the area just east of U.S. 131 on both sides of the river.

Work in 2008

The work will continue downstream up to the former dam site. This area contains some of the most contaminated sediments.

Flood plain boundary
This is the area that was under water when the hydroelectric dam was in operation in the 1960s and shows the area that was studied as part of the cleanup. This area is currently under the control of the state of Michigan.

Processing facilities
These temporary holding areas (detailed below) will be relocated downriver as operations move in that direction.

Excavating contaminated materials

The cab of the excavator is like a real-time video challenge: Operators manipulate the joysticks to the left and right of the computer screen to conduct the satellite-guided dredging of river sediment. Equipment operators will maneuver the excavator's specially fitted 40-foot-long arm and bucket to reach out from the riverbanks. The video display will be their guide.

Exactly where sediment-containing PCBs are located has already been loaded onto the computers. A satellite signal bounces to global-positioning-system sensors on the excavator to indicate exactly where and how deep the operator should scoop sediment from the river's bottom, banks and flood plains. The data — accurate to within one inch — dictate whether workers need to dig more or if they've dug too much. Take out too little dirt, and the river stays contaminated. Take out too much, and the expense of the cleanup project grows.

Processing facility

The wet, contaminated sediment will be hauled on large dump trucks to holding areas, where it will dry for 1 to 3 days before it's moved to a landfill. Once the section of river is cleaned, the facility will be moved downriver.

As of Friday, no agreements had been reached specifying where the dried sediment will be dumped. Controversy arose this spring when Kalamazoo residents learned of initial plans to deposit the sediments at the Allied Paper Inc. landfill between Alcott and Cork streets. Those plans have been nixed for now.

Restoring the landscape

The state of Michigan owns 123 acres on either side of the 1.5-mile stretch of the river. Once the contaminated sediments have been removed from the river and surrounding land, the banks will be restored to a gentle slope and planted with native water plants to encourage wildlife and recreational use of the area.

River bank during processing
Where possible, the contractor will use contaminated soil up the river bank as an initial filter for the drained water.

River bank after restoration
The river bank will be restored based on the natural flow of the river. In this example, the flow hits the opposite bank.

How long will it take?
"This is the first step," said Sam Borries, the U.S. Environmental Protection Agency's on-scene coordinator for the two-year project. "We hope this builds momentum for the cleanup of the rest of the river." Momentum will be key, given the cleanup of the river near Plainwell represents only about 2 percent of the 80-mile Superfund site, which runs to Saugatuck.

Who pays for it?
Georgia-Pacific and Millennium Holdings LLC are financing the $25 million cleanup and are spending $15 million to study the 23 miles of river upstream from Plainwell to determine whether there are PCBs present there. Papermaking activities are what generated the waste that has flowed and settled downstream. EPA officials have said additional companies that might have been responsible for dumping PCBs into the river may be identified to finance future cleanup efforts.

How will the work be monitored for safety?
Throughout the removal portion of the project, officials will be taking daily readings downstream from where work is taking place to determine whether PCBs are escaping their control measures. If they are, "then we would stop work immediately and look at what needs to be done to fix the problem," Borries said.

Want to know more?
Check out the EPA report on the project at: www.epaosc.org/site_profile.asp?site_id=2815

Sources: Environmental Protection Agency; Gazette research

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